

We claim:

1. A method for investigating the presence of Anthrax (*Bacillus anthracis*) on a substrate, comprising:
  - a) selecting a first area from the surface of the substrate, the first area sufficiently large to contain a small plurality of Anthrax organisms, then
  - b) selecting a wide field of view within the first area for further investigation, then
  - c) irradiating the wide field of view plus an area surrounding the wide field of view with sufficient energy to photobleach the irradiated area, then
  - d) collecting Raman shifted light from the wide field of view, then
  - e) analyzing the Raman shifted light for patterns characteristic of Anthrax microorganisms.
2. The method of claim 1, further comprising repeating steps a) to e) for a second area.
3. The method of claim 1, where the step of analyzing includes analyzing the strain of the Anthrax microorganism.
4. The method of claim 1, where the step of analyzing includes analyzing the viability of the Anthrax microorganism.
5. The method of claim 1, where the step of analyzing includes analyzing the growth medium in which the Anthrax microorganism has been grown.
6. A method for investigating the presence of pathogenic microorganisms on a substrate, comprising:
  - a) selecting a first area from the surface of the substrate, the first area sufficiently large to contain a small plurality of pathogenic microorganisms, then
  - b) selecting a wide field of view within the first area for further investigation, then
  - c) irradiating the wide field of view plus an area surrounding the wide field of view with sufficient energy to photobleach the irradiated area, then
  - d) collecting Raman shifted light from the wide field of view, then
  - e) analyzing the Raman shifted light for patterns characteristic of pathogenic microorganisms.
7. The method of claim 6, further comprising repeating steps a) to e) for a second area.

8. The method of claim 6, where the step of analyzing includes analyzing the strain of the pathogenic microorganism.
9. The method of claim 6, where the step of analyzing includes analyzing the viability of the pathogenic microorganism.
10. The method of claim 6, where the step of analyzing includes analyzing the growth medium in which the pathogenic microorganism has been grown.
11. The method of claim 6, where the Raman shifted light from the wide field passes through a spot, line or image focusing type of spectrometer.
12. The method of claim 6, where the pathogenic microorganisms are anthrax spores.
13. The method of claim 6, where the pathogenic microorganisms are protozoa.
14. The method of claim 6, where the pathogenic microorganisms are cryptosporidia microorganisms.
15. The method of claim 6, where the pathogenic microorganisms are Escherichia coli microorganisms.
16. The method of claim 6, where the pathogenic microorganisms are Escherichia coli 157 microorganisms.
17. The method of claim 6, where the pathogenic microorganisms are Plague (Yersinia pestis) microorganisms.
18. The method of claim 6, where the pathogenic microorganisms are Smallpox (variola major) microorganisms.
19. The method of claim 6, where the pathogenic microorganisms are Tularemia (Francisella tularensis) microorganisms.
20. The method of claim 6, where the pathogenic microorganisms are Brucellosis (Brucella species) microorganisms.
21. The method of claim 6, where the pathogenic microorganisms are Clostridium perfringens microorganisms.
22. The method of claim 6, where the pathogenic microorganisms are Salmonella microorganisms.
23. The method of claim 6, where the pathogenic microorganisms are Shigella microorganisms.
24. The method of claim 6, where the pathogenic microorganisms are Glanders (Burkholderia mallei) microorganisms.

25. The method of claim 6, where the pathogenic microorganisms are Melioidosis (*Burkholderia pseudomallei*) microorganisms.
26. The method of claim 6, where the pathogenic microorganisms are Psittacosis (*Chlamydia psittaci*) microorganisms.
27. The method of claim 6, where the pathogenic microorganisms are Q fever (*Coxiella burnetii*) microorganisms.
28. The method of claim 6, where the pathogenic microorganisms are Typhus fever (*Rickettsia prowazekii*) microorganisms.
29. The method of claim 6, where the pathogenic microorganisms are *Vibrio cholerae* microorganisms.
30. The method of claim 6, where the pathogenic microorganisms are chosen from the group of filoviruses (such as Ebola and Marburg viruses), naviruses (such as Lassa fever and Machupo viruses) and alphaviruses (such as Venezuelan equine encephalitis, eastern equine encephalitis, and western equine encephalitis).
31. The method of claim 6, where the pathogenic microorganisms are *Giardia* microorganisms.
32. The method of claim 6, where the pathogenic microorganisms are *Candida albicans* microorganisms.
33. The method of claim 6, where the pathogenic microorganisms are *Enterococcus faecalis* microorganisms.
34. The method of claim 6, where the pathogenic microorganisms are *Staphylococcus epidermidis* microorganisms.
35. The method of claim 6, where the pathogenic microorganisms are *Staphylococcus aureus* microorganisms.
36. The method of claim 6, where the pathogenic microorganisms are *Enterobacter aerogenes* microorganisms.
37. The method of claim 6, where the pathogenic microorganisms are *Corynebacterium diphtheriae* microorganisms.
38. The method of claim 6, where the pathogenic microorganisms are *Pseudomonas aeruginosa* microorganisms.
39. The method of claim 6, where the pathogenic microorganisms are *Acinetobacter calcoaceticus* microorganisms.

40. The method of claim 6, where the pathogenic microorganisms are *Klebsiella pneumoniae* microorganisms.
41. The method of claim 6, where the pathogenic microorganisms are *Serratia marcescens* microorganisms.
42. The method of claim 6, where the irradiating light is in the ultraviolet spectral region with wavelength less than 410 nm.
43. The method of claim 6, where the irradiating light is in the visible spectral region with wavelength less than 780 nm and greater than 410 nm.
44. The method of claim 6, where the irradiating light is in the near infrared spectral region with wavelength less than 2500 nm and greater than 780 nm.
45. The method of claim 6, where the step of analyzing includes analyzing the strain of the pathogenic microorganisms.
46. The method of claim 6, where the step of analyzing includes analyzing the viability of the pathogenic microorganisms.
47. The method of claim 6, where miniaturized components are used to enable a handheld detector.